

REMARKS:

Claims 1-25 are pending in the present application. By virtue of the present amendments, claim 26 has been cancelled without prejudice and claims 1, 3-13, and 15-25 have been amended. No new matter has been added by these amendments to the claims, as the claims have been amended to incorporate limitations which are, in all cases, fully supported by the application as filed.

Claim Objections

In the Office Action dated May 14, 2010, the Examiner initially objected to claims 1, 15, and 26 of the present application for failing to include a proper transitional phrase in accordance with U.S. claiming practice. Further, the Examiner objected to claims 7 and 20 for including the term “whilst.” By the present amendments, claims 1, 15, and 26 have been amended to include the transitional phrase “comprising,” and claims 7 and 20 have been amended to replace the term “whilst” with the term “and” in accordance with the Examiner’s instructions. Accordingly, the claims of the present application, as amended, are now believed to be in suitable form, and Applicant respectfully requests that the Examiner’s objection be withdrawn.

35 U.S.C. §101

In the Office Action dated May 14, 2010, the Examiner then rejected claims 15-25 pursuant to 35 U.S.C. §101 as being directed toward non-statutory subject matter. With regard to this rejection, it is noted that in addressing Applicant’s previous response in the first portion of the Office Action, the Examiner first indicated that “[t]he rejections set forth under 35 USC 101

for Claims 15-24 and 25 are withdrawn because the claims recite statutory subject matter.” See Office Action dated May 14, 2010 at page 2. However, on page 5 of the Office Action, the Examiner then reiterated his previous rejection under 35 U.S.C. § 101, and asserted that the apparatus recited in claims 15-24 was merely computer software and that claim 25 was drawn to a form of energy. As such, it is unclear whether claims 15-25 continue to be rejected under 35 U.S.C. § 101 or whether the Examiner has withdrawn that rejection.

Regardless of whether or not the Examiner’s rejection under 35 U.S.C. § 101 has been maintained in the Office Action, however, Applicant continues to respectfully submit that although the claims include software-related elements, the claims nonetheless recite tangible limitations, including, for example, a data processing unit and an input unit. As set forth in the present application, both the data processing unit and the input unit are tangible elements that are connected to one another and/or to an injection molding machine in order to allow the input of operating parameters to be in tune with the machine configuration and/or machine environment. See, e.g., page 4. Furthermore, by the present amendments, the claims of the present application, including claim 15, have been amended to specifically indicate that the claimed apparatus includes a graphical user interface, which is yet a further hardware component that is incorporated into the presently-claimed apparatus. As such, the apparatus recited in claims 15-24, although making use of certain software components, also includes a number of hardware components such that the apparatus can in no way be characterized as simply being directed to software *per se*.

Similarly, claim 25 was previously directed to a data carrier that includes a program for the accomplishment of the method of claim 1. That data carrier is necessarily and inherently a part of a method that is tied to an injection molding machine and, as such, the data carrier cannot

simply be regarded as a “form of energy.” Solely for purposes of advancing prosecution of the present application, however, Applicant has amended claim 25 to recite a “non-transitory computer readable medium,” which would inherently be stored in an apparatus of the present invention that is capable of controlling a plastics material injection molding machine.

In light of the foregoing, Applicant thus submits that claims 15-25 are directed to statutory subject matter.

35 U.S.C. §112, 1st Paragraph

In the Office Action dated May 14, 2010, the Examiner then rejected claim 26 as failing to comply with the written description requirement. In particular, the Examiner asserted that the claim recited that “alternative possibilities are visualized as a selected choice based on the operator’s input,” but that there was no mention in the original specification of “selected choices based on the operator’s input” that have “alternative possibilities.” See Office Action at page 7.

With regard to this rejection, Applicant initially points out that by the present amendments, claim 26 has been cancelled without prejudice. Claim 1, however, has been amended to include limitations similar to those that were previously presented in claim 26, such that claim 1, as amended, recites that “...when the operator’s input is made, even at a hierarchically higher levels input possibilities are visualized as a selected choice based on the operator’s input” (emphasis added). Such input possibilities are described, for example, on page 2, lines 27-32 of the present application, which discusses the input possibilities that may be selected by an operator for the additional parts of the operating system and further indicates that those input possibilities become clearer and clearer as the creation of the operating sequence progresses. As another example of “input possibilities,” page 5, lines 5-17 of the present application clearly indicates that a selected choice of actuating fields alters as the user makes an

input, thus making it possible to design “input fields which alter continuously in dependence on the inputs of the user.” In light of these various descriptions of “input possibilities” in the present application and the cancellation of claim 26 without prejudice, Applicants respectfully submit that the claims of the present application are in full compliance with the requirements of 35 U.S.C. §112, 1st paragraph and that the Examiner’s rejection should be withdrawn.

35 U.S.C. §112, 2nd Paragraph

In the Office Action dated May 14, 2010, the Examiner also rejected claims 1, 3-5, 9-13, 15-18, 21-24, and 26 under 35 U.S.C. §112, 2nd paragraph as being indefinite. In particular, the Examiner set forth a series of assertions that the claims failed to conform to standard U.S. claiming practice for method claims and that certain terms and phrases in the application lacked antecedent basis. By virtue of the present amendments, however, each of these various assertions have been rendered moot as the claims now recite various positive steps, resolve any antecedent basis issues, and clarify certain terms and phrases, as necessary. Accordingly, Applicant respectfully submits that the Examiner’s rejection pursuant to 35 U.S.C. §112, 2nd paragraph should be withdrawn as well.

35 U.S.C. §103

In the Office Action dated May 14, 2010, the Examiner rejected claims 1-7, 9-20, and 22-25 pursuant to 35 U.S.C. §103(a) as being unpatentable over the combined teachings of U.S. Patent No. 6,684,264 (“Choi”), U.S. Patent No. 6,892,361 (“Kandogan”), and U.S. Patent No. 6,883,143 (“Driskell”). Additionally, the Examiner rejected claims 8 and 21 pursuant to 35 U.S.C. §103(a) as being unpatentable over the combined teachings of Choi, Kandogan, Driskell,

and U.S. Patent No. 4,674,053 ("Bannai"). In rejecting the claims, although the Examiner acknowledged that Choi does not disclose providing an operator with a selected choice of input possibilities that can be added in a compatible manner to an existing operating sequence as part of a hierarchical navigation process, the Examiner asserted that Choi can be combined with Kandogan and Driskell and that such a combination could be used to render obvious the claims of the present application. See Office Action at pages 6-8. Applicant respectfully disagrees.

Before discussing these rejections, however, Applicant believes it to be beneficial to briefly review the features and claims of the present invention to place the discussion of the rejections in the proper context.

As described in detail in response to the previous Office Action, the present invention relates to a method and apparatus for interactive control of a plastics material injection molding machine where a data processing unit presents visualization of a selected choice of input possibilities to the operator, along with a selected choice of actuating fields, which allows the operator to add additional parts of the operating sequence in a compatible manner into existing parts of the operating sequence. These input possibilities are dynamic and are altered each time an input is made, such that, as the creation of the operating sequence progresses, the input possibilities for the operator become clearer and clearer. Additionally, by using the method and apparatus of the present invention, the operator can see on a screen (of the graphical user interface) not only the sequence of the injection molding process, but also how the several steps in the sequence are hierarchically related. Even when viewing the different hierarchical levels, the operator can still see the alternative possibilities such that, on each hierarchical level, the operator can see where the operator is operating or giving input to the data processing unit, and can also see which optional alternatives he could have selected as a choice of input possibilities

based on the calculations of the data processing unit.

In this regard, independent claim 1 of the present application, as amended, recites a method for the interactive control of a plastics material injection molding machine in which an operating sequence is recorded in a data processing unit such that, by using the data set, (i) “the operator is provided on a graphical user interface with visualization of a selected choice of input possibilities...for additional parts of the operating sequences that can be added in a compatible manner into the existing parts of the operating sequence...;” (ii) “the input unit makes available to the operator on the graphical user interface a selected choice of actuating fields corresponding to the additional parts of the operating sequence...;” and (iii) “wherein the navigation surface comprising at least three lines or three columns of actuating and input fields is hierarchical from line to line or column to column and is represented on the surface with a plurality of navigation levels associated with one another such that the operator is able to visualize a path through the at least three lines or three columns of actuating and input fields.”

Similarly, independent claim 15 recites an apparatus for the interactive control of a plastics material injection molding machine in which a data set is also used to offer and display to the operator “a selected choice...of possible input possibilities, based on machine configuration and machine environment, for additional parts of the operating sequence...” that can be “added in a compatible manner into existing parts of the operating sequence.” Claim 15 also recites that the selected choice of input possibilities that are compatible to the existing parts of an operating sequence are displayed on a navigation surface that “comprises at least three lines or at least three columns of actuating fields that are at the same time input fields, and that the navigation surface is hierarchical from line to line and column to column and comprises a plurality of navigation levels associated with one another such that the operator is able to

visualize a path through the at least three lines or three columns of actuating and input fields.”

In short, and as also pointed out in Applicant’s previous response, independent claims 1 and 15 both include limitations with respect to providing an operator with a selected choice of compatible input possibilities and a selected choice of actuating fields, and then displaying such information on a navigation surface in a hierarchical form such that a plurality of navigation levels are associated with one another and such that the operator is able to visualize a path through the actuating and input fields.

Of course, to establish a *prima facie* case of obviousness under §103, the cited reference or combination of references must teach or suggest each and every claim limitation found in a claim against which the reference or combination of references is cited. See, e.g., MPEP §§ 706.02(j) and 2142. As described in Applicant’s previous response and as the Examiner has again acknowledged in the Office Action dated May 14, 2010, Choi does not include any teaching or suggestion with regard to using a data set to provide an operator with a selected choice of input possibilities for additional parts of the operating sequence that can be added in a compatible manner into existing parts of the operating sequence, much less teach or suggest that the selected choice of input possibilities can be arranged in a hierarchical menu to allow an operator to see the alternatives to the prior choices. Instead, in Choi, an operator is only provided with a selection that relates to the provided equipment and the available machine function. Such selections are not checked for their compatibility to the already existing operating sequence and, indeed, Choi provides no teaching or suggestion as to whether or how a basic selection could be compatibly added to the existing operating sequence.

Additionally, Choi has a fixed keyboard in that the pushbuttons are not images displayed on the screen, but rather are physical pushbuttons arrayed around the screen. Thus, the

visualization does not vary with regard to the orientation of the pushbuttons, and it would not be possible to provide a logical orientation on the screen as long as these pushbuttons are used. Furthermore, although Choi indicates that certain manual functions can be configured via the use of a graphical user interface, that indication still does not provide any teaching or suggestion with regard to a hierarchical navigation process where the different levels in the process are logically dependent on the machine itself and on the periphery equipment, and where the different levels are adjusted after each input by the operator. Indeed, such a navigation process would not even be possible by using fixed hardware buttons arranged around a screen.

Recognizing that Choi failed to teach or suggest providing an operator with a selected choice of input possibilities that can be added in a compatible manner and arranged in a hierarchical menu to allow an operator to see the alternatives to the prior choices, the Examiner thus turned to Kandogan to supply those missing teachings. Kandogan, however, fails to cure the deficiencies of Choi as Kandogan also fails to describe providing an operator with a selected choice of input possibilities that are compatible with an existing operating sequence, and then displaying those input possibilities in a hierarchical manner such that the navigation surface displays a plurality of navigation levels associated with one another and allows an operator to visualize a path through the hierarchical menu of input possibilities.

In Kandogan, a method to facilitate a computer operator's ability to complete tasks is described in which a computer monitor is first used to display a number of jigsaw or connector pieces that represent various tasks that an operator may want to complete. See column 4, lines 34-43. To indicate a desire to complete a certain task, a number of attachment pieces can then be selected from a menu or tool bar, which is also displayed on the computer monitor, and those attachment pieces can then be interconnected to the jigsaw or connector pieces to indicate the

desire to complete a certain task (e.g., configuring a port on a computer). See column 4, lines 53-59. Kandogan then indicates that once that initial task is completed two additional pieces are then generated and placed on the tool bar such that those additional pieces can be selected from the tool bar and placed into an existing tree structure in Kandogan to complete a subsequent desired task (e.g., configuring a printer and a driver for the printer). See column 5, lines 22-25. In this regard, however, it is important to recognize that Kandogan does not describe a hierarchical arrangement of input possibilities that are compatible with an existing operating sequence. Kandogan indicates that additional connector and attachment pieces are generated once a desired task is completed; however, an operator must still select those additional pieces and place them into the tree structure of Kandogan. As such, Kandogan neither teaches or suggests a hierarchical arrangement of input possibilities where an operator can visualize a plurality of navigation levels showing the selected choices of input possibilities that are compatible with one another. In other words, Kandogan neither teaches nor suggests a method whereby an operator can visualize a desired path through the plurality of navigation levels where each level of the path includes input possibilities that are compatible with an existing operating sequence.

In the Office Action dated May 14, 2010, the Examiner further indicated that the “matching” of connector and attachment pieces that occurs in Kandogan is functionally equivalent to the “compatible manner” in which additional parts of an operating sequence can be added to an existing operating sequence in accordance with the present invention. It is noted, however, that while the matching that occurs between a corresponding connector piece and attachment piece in Kandogan may be considered a form of compatibility, such a matching still does not lead to the generation of a hierarchical arrangement of input possibilities that can be

added in a compatible manner into existing parts of an operating sequence. Again, in Kandogan, an operator must still select additional pieces that correspond to a desired task and then insert them into an existing tree structure. There is no teaching or suggestion in Kandogan with regard to providing a hierarchical structure of compatible input possibilities such that the operator can visualize a path through the plurality of navigation levels. Driskell adds nothing further in this regard and was merely cited by the Examiner with respect to its teachings regarding a graphical user interface having multiple columns and lines.

Accordingly, even if Choi could be properly combined with Kandogan and Driskell¹, the combined teachings would still fail to teach or suggest each and every limitation of independent claims 1 and 15, as is required to establish a *prima facie* case of obviousness pursuant to 35 U.S.C. §103(a) and MPEP §§ 706.02(j) and 2142. Thus, Applicant respectfully submits that claims 1 and 15 are not rendered obvious by the cited prior art references and are in condition for allowance.

¹ Applicant also points out that to establish a *prima facie* case of obviousness based on a combination of the teachings of one or more prior art references, there must also be some reason for the combination of the teachings of the prior art references, whereby a person of ordinary skill in the art would make the substitutions or modifications required to achieve the claimed invention. See KSR International Co. v. Teleflex Inc., 550 U.S. 398, 82 USPQ2d 1385 (2007) (“KSR”). In this regard, and as pointed out in the “Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103 in View of the Supreme Court Decision in KSR International Co. v. Teleflex Inc.” that have been promulgated by the U.S. Patent and Trademark Office, the Court reiterated that “there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” KSR, 550 U.S. at 418, 82 USPQ2d at 1396. For purposes of this response only, Applicant has assumed that the combination of prior art references is proper. However, Applicant questions whether there is a valid reasoning for one of ordinary skill in the art to combine the teachings of the cited references to achieve the claimed invention as, despite the Examiner’s assertions to the contrary, Choi, Kandogan, and Driskell do not appear to be analogous art. Choi is directed to the operation of an injection molding machines, while Kandogan and Driskell are directed toward general toolbar and task management that occurs on a graphical user interface.

Claims 2-14 and 16-25 depend from these independent claims, and thus are also believed to be allowable in view of the remarks presented above with respect to independent claims 1 and 15.

In the Office Action dated May 14, 2010, the Examiner also rejected claims 1-7, 9-20, and 22-26 pursuant to 35 U.S.C. §103(a) as being unpatentable over the combined teachings of Choi, U.S. Patent No. 6,883,143 ("Bartz"), and Driskell. The Examiner further rejected claims 8 and 21 pursuant to 35 U.S.C. §103(a) as being unpatentable over the combined teachings of Choi, Kandogan, Driskell, and Bannai. Similar to the rejections discussed above, the Examiner acknowledged that Choi does not disclose providing an operator with a selected choice of input possibilities that can be added in a compatible manner to an existing operating sequence as part of a hierarchical navigation process, but then asserted that Bartz could be used to supply the missing teachings with regard to the display of input possibilities in a hierarchical manner. Applicants again disagree.

Contrary to the Examiner's assertions, Bartz does not describe a method or apparatus where an operator is provided with a selected choice of input possibilities that are compatible with an existing operating sequence, and also does not describe that those input possibilities are then displayed in a hierarchical manner such that a navigation surface displays a plurality of navigation levels associated with one another and such that the operator is able to visualize a path through actuating and input fields. Instead, Bartz describes a method and system to guide a user through a series of tasks that make use of various graphic elements that, once activated, can subsequently activate and/or deactivate other graphic elements to thereby guide a user through a particular task. See column 2, line 54 to column 3, line 18. In describing such a system, however, it is important to note that Bartz does not describe a hierarchical display of input

possibilities on a navigation surface where an operator can visualize a path through the plurality of navigation levels. Instead, Bartz merely describes a series of discrete tasks that only become apparent once a first task or element is activated and completed. For example, Fig. 4C of Bartz describes an embodiment of its method where if element “A” is activated, then elements “A3” and “A4” will follow. Similarly, Fig. 4D of Bartz describes an embodiment where if elements “B” and “B1” are activated initially, then elements “B2” and elements “B3” and “B4” will be activated. As such, it is clear that Bartz is neither teaching or suggesting providing an operator with a selected choice of input possibilities that are compatible with an existing operating sequence, along with a selected choice of actuating fields, and then displaying those input possibilities in a hierarchical manner such that a user can readily visualize a path through the actuating and input fields, as recited in claims 1 and 15 of the present application.

Again, Driskell adds nothing further in this regard and was merely cited by the Examiner with respect to its teachings regarding a graphical user interface having multiple columns and lines.

Accordingly, Applicant submits that even if Choi could be properly combined with Bartz and Driskell², the combined teachings would also still fail to teach or suggest each and every limitation of independent claims 1 and 15, as is required to establish a *prima facie* case of obviousness pursuant to 35 U.S.C. §103(a) and MPEP §§ 706.02(j) and 2142. Thus, Applicant respectfully submits that claims of the present application are also not rendered obvious by the

² Applicant again questions whether there is a valid reasoning for one of ordinary skill in the art to combine the teachings of the cited references to achieve the claimed invention as, despite the Examiner's assertions to the contrary, Choi, Bartz, and Driskell also cannot be characterized as analogous art. Bartz merely relates to method and system for performing task on a computer and includes no mention of a plastics material injection molding machine.

additional cited prior art references and are in condition for allowance.

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Having fully responded to the objections and rejections set forth in the Office Action dated May 14, 2010, Applicant respectfully requests allowance of all claims now pending in the present application.

Respectfully submitted,

A handwritten signature in black ink that reads "Terry L. Wright". The signature is written in a cursive style with a large, stylized "T" and "W".

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